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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/557,281

11/18/2005

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12/27/2007

EXAMINER

VINH, LAN

ART UNIT

PAPER NUMBER

1792

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/557,281

Applicant(s)

MIZE, JOHN D.

Examiner

Lan Vinh

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16-27 is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-11, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11805</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakabayashi et al (US 2002/0033381)

Nakabayashi disclose a surface processing method comprises the steps of providing a used PVD component having a layer deposited on a component surface (page 1, paragraphs 0002, 0004) first etching the deposited layer using a first acid-comprising etchant (page 3, paragraph 0051, 0068)

after the first etching, entraining abrasive particles in a flow of gas, impinging the

particles on the etched layer, and abrading the etched layer (page 3, paragraph 0054)

after the abrading, second etching the abraded layer using a second acid- comprising etchant.(page 3, paragraph 0059, 0068)

Regarding claim 2, since Nakabayashi discloses the same steps performed in the same sequence using the same etchant as the claimed invention, under the principle of inherency, the first etching, the abrading, and the second etching in Nakabayashi method would have removed the deposited layer at a rate greater than the same. first etching and the same second etching performed without the abrading.

Regarding claim 3, since since Nakabayashi discloses the same steps performed in the same sequence using the same etchant as the claimed invention, under the principle of inherency, the first etching, the abrading, and the second etching in Nakabayashi method would have removed less of the PVD component surface than occurs in removing an equivalent thickness of the deposited layer by extending the abrading and performing the same second etching without the first etching

2. Claims 1-3, 9, 11, 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi et al (US 6902814)

Takahashi discloses a process for producing ceramic part. The process comprises the steps of:

providing a quartz part/used PVD component having a layer deposited on a component surface (col 9, lines 35-42; see abstract)

rinsing the part in an solution comprises of nitric acid and HF to reduce the NA content

of the surface from several ten minutes (col 9, lines 42-45), which reads on first etching the deposited layer using a first acid-comprising etchant (col 9, lines 43-45)

after the first etching, entraining abrasive particles in a flow of gas, impinging the particles on the etched layer, and abrading the etched layer (col 9, lines 55-60)

after the abrading, second etching the abraded layer using a second HF-acid-comprising etchant.(col 9, lines 60-65)

Regarding claim 2, since Takahashi discloses the same steps performed in the same sequence using the same etchant as the claimed invention, under the principle of inherency, the first etching, the abrading, and the second etching in Takahashi method would have removed the deposited layer at a rate greater than the same. first etching and the same second etching performed without the abrading.

Regarding claim 3, since since Takahashi discloses the same steps performed in the same sequence using the same etchant as the claimed invention, under the principle of inherency, the first etching, the abrading, and the second etching in Takahashi method would have removed less of the PVD component surface than occurs in removing an equivalent thickness of the deposited layer by extending the abrading and performing the same second etching without the first etching

The limitations of claims 9, 11 have been discussed above

Regarding claim 15, Takahashi discloses that the process produces Ra of 20 micronm (784 micronin)>300 micronin (col 9, lines 57-59)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4-5, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al (US 2002/0033381) in view of EP 1178133

Nakabayashi method has been described above. Unlike the instant claimed inventions as per claims 4-5, 8, Nakabayashi fails to disclose that the component is RF coil in PVD reactor/metal

EP 1178133 discloses a method for extending life of metallic coil/component of processing chamber by etching (col 4, paragraph 0019)

Since Nakabayashi concerns with a method for cleaning used chamber component (page 1, paragraph 0015), ones skilled in the art would have found it obvious to have employed Nakabayashi method to process the components taught in EP 1178133 in order to prevent generation of contaminant as taught in Nakabayashi (page 1, paragraph 0015)

4. Claims 10, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al (US 2002/0033381) in view of Banholzer et al (US 5,565,058)

Nakabayashi method has been described above. Unlike the instant claimed inventions as per claims 10, 14, Nakabayashi fails to disclose wherein the first and second

etchants are the same etchant that, aside from processing impurities, consists of a mixture of equal volumetric parts deionized water, HF, and HNO₃

Banholzer discloses a pretreatment method for vacuum chamber component comprises the step of cleaning/etching the component with a solution consists of a mixture of equal volumetric parts deionized water, HF, and HNO₃ (col 4, lines 5-10), abrading comprises bead blasting with 36-80 grit alumina (col 3, lines 1-5)

One skilled in the art at the time the invention was made would have found it obvious to modify Nakabayashi method by using a solution consists of a mixture of equal volumetric parts deionized water, HF, and HNO₃ in the first and second etching step in view of Banholzer teaching because Banholzer discloses that prior to bead blasting step the part are chemically cleaned with a solution consists of a mixture of equal volumetric parts deionized water, HF, and HNO₃ to remove surface contamination such as oxide (col 4, lines 1-10). One skilled in the art at the time the invention was made would have found it obvious to employ 36-80 grit alumina in Nakabayashi blasting step as conventional in the art as evidence by Banzoler (col 3, lines 1-5)

Allowable Subject Matter

5. Claims 6-7, 12-13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 16-27 allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 16, 25, the cited prior art of record fails to disclose a step of first etching the deposited layer for from greater than 1 to 15 min using an etchant that comprises HF/ first etching the deposited layer for from greater than 1 to 15 min using an etchant consists of a mixture of equal volumetric parts deionized water, HF, and HNO₃, in combination with the rest of the limitations of claims 16, 25

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Vinh whose telephone number is 571 272 1471. The examiner can normally be reached on M-F 8:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571 272 1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


LV

December 20, 2007